THE FISHES OF TRINIDAD, GRENADA, AND ST. LUCIA, BRITISH WEST INDIES.

BY HENRY W. FOWLER.

In February and March of 1915 Mr. Richard M. Abbott visited various of the Lesser Antilles, and while at the above-named islands made several collections of fishes. Through his generosity, these have all been received as gifts to the museum of the Academy.

Trinidad.

The collection from this island is the most extensive. It was made chiefly in the fish-market of Port-of-Spain, from February 27 to March 7. The market fishes are all taken in the Gulf of Paria, brought to town, and there disposed of as food. The waters of the Gulf of Paria are continually discolored, so that they have a muddy color. This has been explained as due to the vast quantities of river deposits, silt, etc., carried down the Orinoco and through its delta out into the sea. The shore currents then carry the soiled and less saline waters north into the more or less enclosed gulf, where they apparently are unable to clear. Apparently continuously muddied, the water supports a rich fish-fauna. A few of the larger species were seen in the market, and though carefully noted, were not preserved. They are included below with this reservation.

No account of the marine fishes of Trinidad has ever appeared. The records of the few species known from the island occur principally as scattered references to material in the British Museum. These will be found in the catalogues by the late Dr. Albert Günther,[1] and in the second edition by Dr. G. A. Boulenger.[2] Dr. Günther also described several cyprinodonts in 1868,[3] and about the same time Hill has some notes.[4] More recently Dr. Barton A. Bean described a flounder from Port-of-Spain.[5]

The first work on the fresh-water fishes was contributed by the late Dr. Theodore Gill in 1858.[6] Subsequently it was the subject

[1] *Cat. Fish. Brit. Mus.*, I to VIII, 1858–70.
[2] *L.c.*, Ed. 2, I, 1895.
[3] *Proc. Sci. Assoc. Trinidad*, 1868, pp. 224–227.
[4] *L.c.*, 1868, pp. 210–223; pp. 227–237.
[5] *Proc. U. S. Nat. Mus.*, XVII, 1895, pp. 635–636, fig. 3.
[6] *Ann. Lyc. Nat. Hist. N. Y.*, VI, 1858, pp. 363–430.

of critical notes by the late Dr. Lütken.[7] Recently a very interesting and valuable account appeared by Dr. C. Tate-Regan, based chiefly on the collection, notes, and sketches of Mr. Leehmere Guppy, Jr.[8]

In the present paper a list of all the fishes now known from the island is given. Where species are represented in the collections of the Academy, they are mentioned with the number of specimens and their dimensions. The references pertain to the few species previously known from Trinidad. While likely most of the fresh-water species have been discovered, further collecting of the marine forms will undoubtedly yield many others. Possibly seven or more times as many as here listed, if not most of those comprising the vast West Indian fauna, will eventually be found.

Ginglymostoma cirratum (Bonnaterre). "Nurse."

One seen, about seven feet in length. Like all the sharks, valued as food.

Mustelus canis (Mitchill).

Two young, $9\frac{7}{8}$ and 10 inches long, with eight others not preserved, taken from a female 45 inches long.

Galeocerdo arcticus (Faber).

One in the market, about four feet long.

Eulamia oxyrhinchus (Müller and Henle).

One seen in the market contained four young, each of which about 14 inches long. They were attached to the mother by a placenta.

Sphyrna tiburo (Linnæus).

One in the market about three feet long.

Sphyrna zygæna (Linnæus).

Number of examples, moderate in size, were seen in the market.

Rhinobatos pellucens (Walbaum).

One example $13\frac{5}{8}$ inches long.

Dasyatis hastata (De Kay).

A large sting-ray, evidently this species, was seen but not preserved.

Ætobatus narinari (Euphrasen).

One seen about 14 inches wide.

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[7] *Vid. Med. Kjöbenhavn*, 1873, pp. 214–217; 1874, pp. 220–240.
[8] *Proc. Zool. Soc. London*, 1906, pp. 378–393, Pls. 21–25.

Albula vulpes (Linnæus).

Small example $5\frac{3}{8}$ inches long. Back with about ten narrow transverse brownish bars, fading out below lateral line.

Tarpon atlanticus (Valenciennes).

Megalops thrissoides Günther, Cat. VII, 1868, p. 472.

Clupanodon pseudohispanicus (Poey).

One example $5\frac{1}{2}$ inches long.

Sardinella macrophthalma (Ranzani).

Two small examples, $2\frac{6}{16}$ inches.

Sardinella humeralis (Valenciennes).

Clupea humeralis Günther, *l.c.*, p. 422.

Five adults, the two smaller showing little more dusky about tip of upper caudal lobe. Length $4\frac{3}{16}$ to $5\frac{1}{2}$ inches.

Opisthonema oglinum (Le Sueur).

Clupea thrissa Günther, *l.c.*, p. 432.

Six examples, $5\frac{1}{8}$ to $7\frac{3}{4}$ inches.

Anchovia abbotti sp. nov. Fig. 1.

Head $4\frac{1}{2}$; depth $3\frac{7}{8}$; D. III, 11; A. III, 24, I; P. I, 15; V. I, 6; scales about 40 in lateral series (squamation injured) + 4 more on caudal base; about 9 scales between dorsal origin and middle of belly; about 22 predorsal scales; head width about half its length; head depth at occiput $1\frac{2}{5}$; dorsal base $1\frac{3}{5}$; least depth of caudal peduncle $2\frac{1}{8}$; first branched anal ray about $1\frac{7}{8}$; pectoral $1\frac{1}{3}$; ventral $2\frac{3}{5}$; snout 6 in head; eye $4\frac{2}{3}$; maxillary $1\frac{1}{8}$; interorbital $4\frac{3}{4}$.

Body elongate, rather plump, compressed, profiles more or less similar, greatest depth at dorsal origin, and edges all convex. Caudal peduncle compressed, least depth $1\frac{1}{2}$ its length.

Head compressed, profiles similar though with lower little more inclined, flattened sides slightly constricted below. Snout rather compressed, end rounded in profile, moderately protruded, length $\frac{3}{4}$ its basal width. Eye moderate, rounded, well anterior, and its centre well before first third in head. Adipose eyelid covers eye, well developed. Mouth large, without median depression in front above. Maxillary straight, scarcely expanded terminally and almost reaches gill-opening. Maxillary teeth rather large, slightly curved, sharp-pointed, one-rowed, for first half of bone directed backward and on last half directed forward, not continuous over front of upper jaw. Lower jaw with single row of larger wide-set erect conic teeth, very small near symphysis and larger about middle of rami. All teeth on roof of mouth similar to others, only smaller,

and directed back. Short anterior row of 4 teeth each side of vomer. Long row of palatine teeth, becoming gradually smaller posteriorly. Well-developed patch of pterygoid teeth. Tongue small rounded smooth knob in mandible anteriorly. Upper surface of basibranchial shaft finely asperous. Mandible convex over surface, constricted to small rounded knob at symphysis, rami not elevated inside mouth. Mandible included within upper jaw so that its tip extends well beyond front nostril. Nostrils small, together, a little nearer eye than snout tip. Interorbital moderately convex. Each supraorbital ridge distinct, slopes up straight to nape. Cheek would form an isosceles triangle. Skin on top of head, cheeks and opercles with various little pits or depressions, producing somewhat reticulated or honeycombed appearance.

Gill-opening forward about opposite front pupil edge. Rakers

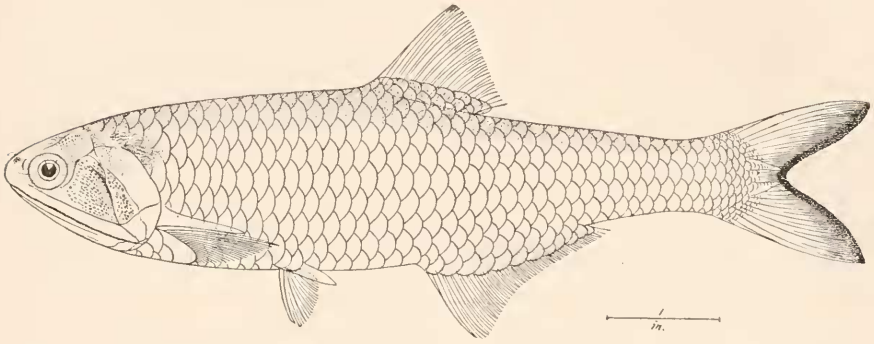

Fig. 1.—*Anchovia abbotti* Fowler. (Type.)

9 + 16, rather slender, ends obtuse, inner edges well denticulated, about $2\frac{3}{4}$ in eye. Filaments $1\frac{1}{2}$ in eye. Pseudobranchiæ about $2\frac{1}{4}$ in eye. Isthmus long, rather narrowly constricted, lower edge depressed or slightly convex. Branchiostegals 12, membranes slightly united as free fold across isthmus in front.

Scales rather loose, narrowly imbricated, arranged in even lengthwise series, more or less uniform in size. Each scale with about 5 vertical striæ. Caudal base scaly, small scales on bases of lobes and several median elongated horizontal scales, though of rather small size. Dorsal and anal with well-developed basal scaly sheaths. Pectoral with long pointed axillary scale, $\frac{2}{3}$ length of fin. Ventral with large axillary scale, long as fin. Both pectorals and ventrals with lower broad scaly flaps.

Dorsal origin midway between centre of eye and caudal base,

front rays elongate, and graduated down from first branched. Anal origin about opposite first fourth in dorsal length, front rays elongate and graduated down from first branched rays, fin low behind. Caudal deeply forked, lobes pointed and nearly equal. Pectoral pointed, reaches ventral. Latter inserted little nearer pectoral than anal, half way to vent, which close before anal or well behind dorsal origin.

Color in alcohol, when fresh, upper surface of back very pale olive, inclining to pale yellowish. Head, sides and lower surface bright silvery-white, and apparently no distinct lateral band lengthwise. Iris whitish, also fins. Dorsal and caudal very slightly tinted grayish, latter yellowish basally and hind edge distinctly blackish its entire extent.

Length $7\frac{1}{4}$ inches.

Type, No. 45,079, A. N. S. P. Port-of-Spain, Trinidad, British West Indies. February–March, 1915. Richard M. Abbott.

Only the above example was obtained. I first thought this must be *Stolephorus surinamensis* Bleeker,[9] a species formerly wrongly identified by most writers with *Engraulis clupeoides* Swainson. It differs, however, from Bleeker's species in several respects, and therefore for the present it may be regarded as distinct. Bleeker's examples were 96 mm. long, and are described with the scales as 35, the fins yellowish and the caudal broadly edged brownish behind. Dr. Eigenmann gives [10] 35 gill-rakers on the lower arch of *A. surinamensis*.

(Named for Mr. Richard M. Abbott, who collected the type.)

Anchovia filifera sp. nov. Fig. 2.

Head $3\frac{1}{2}$; depth $4\frac{3}{4}$; D. III, 12; A. III, 21, I; scales about 36 in lateral series to caudal base + 4 more on latter; 8 scales between dorsal and ventral origins; 14 predorsal scales; head width $2\frac{7}{8}$ its length; head depth at occiput $1\frac{2}{3}$; snout $4\frac{1}{2}$; eye 4; maxillary $1\frac{1}{5}$; interorbital $3\frac{3}{4}$; dorsal length $1\frac{1}{3}$; least depth of caudal peduncle $2\frac{1}{2}$; caudal length $1\frac{1}{8}$; anal base $1\frac{2}{5}$; pectoral length $1\frac{1}{8}$; ventral $2\frac{3}{4}$; mandible $1\frac{2}{5}$.

Body well compressed, moderately long, profiles similar, predorsal with slight median keel and preventral with one better developed, greatest depth at dorsal origin. Caudal peduncle well compressed, least depth about $1\frac{2}{5}$ its length.

Head well compressed, profiles similarly inclined with upper little more convex, flattened sides a little convergent below so that lower

[9] *Ned. Tijds. Dierk.*, III, 1866, p. 178. Surinam.
[10] *Mem. Carnegie Mus.*, V, 1912, p. 448. Bartica Rocks, British Guiana.

surface much narrower than upper and not keeled medianly. Snout conic, slightly compressed, well protruding, basal width slightly less than its length. Eye rounded, centre little behind first third in head. Adipose eyelid well developed, covering eye entirely. Mouth large, front above with slight median depression. Maxillary straight, expanded slightly behind, the end attenuated a little beyond mandibular articulation, though clearly not extending to gill-opening, the expansion $2\frac{1}{3}$ in eye. Maxillary teeth uniserial, close-set, fine, not continuous over front of mouth, and extending back whole length of bone. Similar erect mandibular teeth, only more minute and not continuous across symphysis. Vomer, palatines and pterygoids each with row or series of very minute simple teeth. Tongue smooth small knob, anterior. Basibranchial shaft minutely asperous. Mandible convex over surface, constricted to

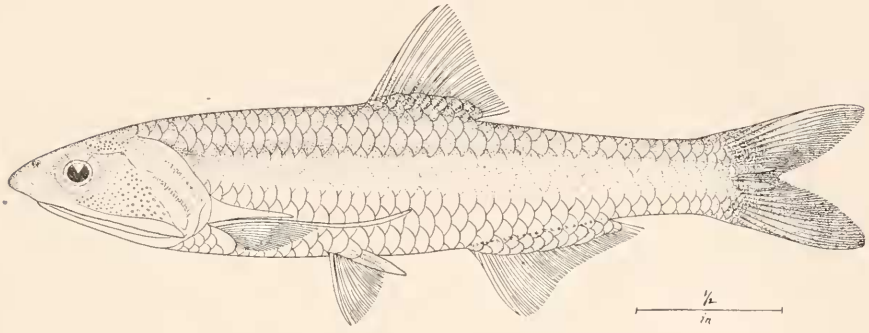

Fig. 2.—*Anchovia filifera* Fowler. (Type.)

point at symphysis, rami not elevated inside mouth or only gradually slope to articulation behind. Mandibular tip extends forward not quite to middle in postnasal length. Nostrils small, together, slightly behind middle in snout length. Interorbital evenly convex. Each supraorbital ridge distinct, flaring out a little over each eye in front. Cheek would form an isosceles triangle, its base about $\frac{2}{3}$ its length. Cheeks, opercles and top of head all very finely tuberculate, especially above.

Gill-opening forward till about midway in eye. Rakers about 25 + 22, slender, pointed, compressed, inner edges minutely denticulated, $1\frac{1}{3}$ in eye. Filaments $1\frac{3}{5}$ in eye. Pseudobranchiæ about 3 in eye. Isthmus long, slender, compressed, lower edge convex. Branchiostegals 12, membranes united anteriorly only very short

distance, forming narrow free fold over anterior trenchant keel of isthmus at that point.

Scales caducous, mostly fallen, narrowly imbricated, arranged in even lengthwise rows, each with about 5 vertical striæ, and all of more or less uniform size. Dorsal and anal depressible within broad basal scaly sheaths. Caudal base scaly, and each lobe with small crowded scales. Pectoral with free pointed axillary scale half length of fin. Similar ventral axillary scale but slightly shorter than fin.

Dorsal origin midway between snout tip and caudal base, graduated down from first branched ray which longest, and tips of front rays not extended far back as tips of last rays. Anal origin slightly before end of dorsal base, or about midway between pectoral origin and caudal base, and graduated down from first branched or longest ray. Caudal well forked, pointed lobes about equal. Pectoral with uppermost ray greatly elongated, extending back nearly far as end of depressed ventral, or if this ray removed fin almost reaching ventral. Ventral inserted little nearer pectoral than anal, reaching about half way to latter. Vent close before anal.

Color in alcohol largely whitish, sides with somewhat translucent appearance. Back and upper surface of head dotted with dusky under slight or pale olive ground-color. Sides of head and iris bright silvery-white. Dorsal pale or grayish, dusky dots on basal scaly sheath. Caudal conspicuously dusky. Row of underlaid and rather obscure pale dusky dots along base of anal. Other fins whitish. Side with broad silvery-white lateral band, expanded over anal and along side of caudal peduncle till wide as eye.

Length 3 inches.

Type, No. 45,080, A. N. S. P. Port-of-Spain, Trinidad, British West Indies. February–March, 1915. Richard M. Abbott.

Also Nos. 45,081 and 45,082, A. N. S. P., paratypes, same data. Head $3\frac{1}{2}$; depth $4\frac{2}{3}$ to $4\frac{3}{4}$; D. III, 12 or III, 13; A. III, 21; scales in lateral series 36 to 38 to caudal base, and 3 or 4 more on latter; about 9 scales transversely between dorsal and ventral origins; 15 or 16 predorsal scales; snout $4\frac{1}{6}$ to $4\frac{1}{2}$ in head; eye 4; maxillary $1\frac{1}{5}$ to $1\frac{1}{4}$; interorbital $3\frac{2}{3}$ to $3\frac{4}{5}$; length $2\frac{7}{8}$ to 3 inches.

This species is closely related to my *A. platyargyrea*,[11] but appears to differ in having the upper pectoral ray elongate and filiform, more anal rays, and a narrower silvery lateral band. In the large

[11] Proc. Acad. Nat. Sci. Phila., 1911, p. 216, fig. 4. St. Martin's, W. I. Tojardo, Porto Rico.

series of *A. platyargyrea* from St. Martin's and Porto Rico I have not been able to locate any specimens with such a peculiarity. All seem to show it gradually attenuated and not appreciably longer than the next succeeding ray. *A. chærostomus* would appear to differ in having the maxillary reaching the gill-opening.

(*Filum*, thread; *fero*, I bear.)

Anchovia trinitatis sp. nov. Fig. 3.

Head $3\frac{3}{4}$; depth $3\frac{3}{4}$; D. III, 11; A. III, 27; P. I, 14; V. I, 6; scales about 36 in lateral series (squamation injured) + 3 more on caudal base; about 9 scales between dorsal origin and middle of belly; 19 scales before dorsal; head width $2\frac{2}{5}$ in its length; head depth at occiput $1\frac{2}{7}$; first branched dorsal ray $1\frac{1}{2}$; dorsal base 2; least depth of caudal peduncle $2\frac{1}{2}$; first branched anal ray $1\frac{3}{4}$; pectoral $1\frac{2}{5}$; ventral $2\frac{3}{5}$; snout 5; eye $3\frac{1}{6}$; maxillary $1\frac{1}{6}$; interorbital $3\frac{1}{2}$.

Body elongate, well compressed, moderately deep, profiles mostly alike, greatest depth at dorsal origin, edges rather narrowly con-

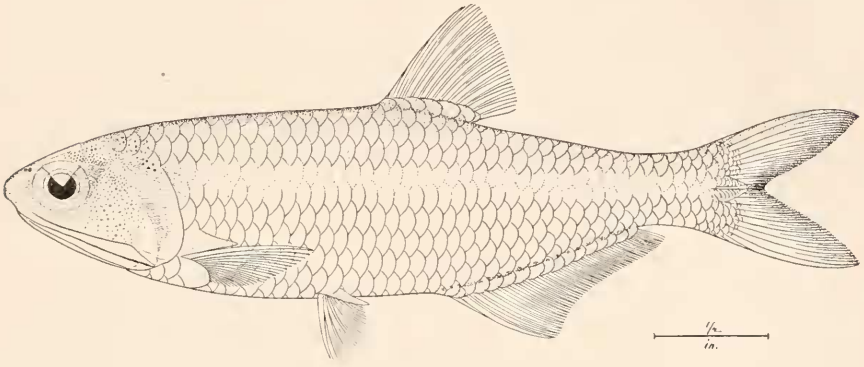

Fig. 3.—*Anchovia trinitatis* Fowler. (Type.)

stricted and preventral region with distinct median keel its whole length. Caudal peduncle compressed, about long as deep.

Head well compressed, profiles alike, though lower little more inclined, flattened sides slightly constricted below. Snout well protruded, rather conic, end rounded in profile, length $\frac{3}{4}$ its basal width. Eye large, rounded, anterior or centre about first third in head. Adipose eyelid well developed, covers eye. Mouth large, with slight median depression in front above. Maxillary straight, slightly expanded terminally, and almost reaches gill-opening. Maxillary teeth simple, conic, all slightly sloping forward, uniform, one-rowed, and extending back to hind end of bone, also not con-

tinuous in front of upper jaw. Similar teeth in mandible, not continuous over front of jaw, which has slight knob. Row of minute teeth on vomer and palatines, and of larger size on pterygoids. Tongue small rounded smooth knob in front of mouth. Upper surface of basibranchial shaft finely asperous. Mandible convex over surface, rami not elevated inside mouth. Mandible included within upper jaw, so that its tip extends slightly before front nostril. Nostrils small, together, nearer eye than snout tip. Interorbital broadly convex. Each supraorbital ridge distinct, slopes up straight to nape, flaring out little in front. Cheek would form an isosceles triangle. Skin on top of head, cheeks and opercles with numerous minute tubercles and little depressions or pits.

Gill-opening forward about opposite first third in eye. Rakers 18 + 20, slender, compressed, pointed, inner edges well denticulated, about $1\frac{1}{2}$ in eye. Filaments 2 in eye. Pseudobranchiæ 3 in eye. Isthmus rather long, slender, lower edge slightly convex. Branchiostegals 11, membranes slightly united as free fold across isthmus in front.

Scales very loose, narrowly imbricated, arranged in even lengthwise rows, more or less uniform in size. Each scale with rather numerous reticulating striæ. Caudal base scaly. Dorsal and anal with well-developed basal scaly sheaths. Pectoral with long pointed axillary scale slightly less than half length of fin. Ventral with free pointed axillary scale, about $\frac{2}{3}$ length of fin. Both pectorals and ventrals with lower broad scaly flaps.

Dorsal origin midway between hind eye edge and caudal base, first branched rays longest, extends back further when depressed than tips of last rays. Anal origin slightly behind dorsal origin, first branched ray longest, fin moderately low behind. Caudal deeply forked, lobes pointed and about equal. Pectoral low, pointed, reaches very close to ventral origin. Latter inserted little nearer anal origin than pectoral, and fin reaches slightly over half way to latter. Vent at depressed ventral tips, well before anal.

Color in alcohol translucent whitish, back above and upper surface of head dusted with minute dusky or dull olive dots. Sides and lower surface of head bright silvery-white, also iris. Narrow median lateral band of silvery-white, slightly tinted pale brassy in places, rather ill-defined, though at no point quite equal to width of pupil. Fins pale, dorsal and caudal slightly grayish. Row of dull underlaid dark spots along anal base on trunk. Hind edge of caudal pale dusky.

Length $3\frac{7}{8}$ inches.

Type No. 45,083, A. N. S. P. Port-of-Spain, Trinidad. February–March, 1915. Richard M. Abbott.

Only the type known. This species is allied with *Anchovia mitchilli*, but differs in its larger size, more protruding snout, narrower lateral band, much longer pectoral, and dark hind caudal edge. *A. astilbe* (Jordan and Rutter),[12] *A. robertsi* (Jordan and Rutter),[13] and *A. januarius* (Steindachner),[14] all have much shorter anals. *A. nattereri* (Steindachner)[15] has a more slender body, smaller eye, and shorter maxillary. *A. olidus* (Günther)[16] has a longer dorsal and more posterior anal.

(Named for the Island of Trinidad.)

Synodus fœtens (Linnæus).

One 10 inches long.

Selenaspis herzbergii (Bloch).

Arius herzbergii Regan, Proc. Z. Soc. London, 1906, p. 386.

One $6\frac{3}{8}$ inches.

Tachisurus spixii (Agassiz).

Arius spixii Regan, *l.c.* Mouth of Rio Carim.
Arius laticeps Günther, Cat. F. Brit. Mus., V, 1864, p. 171, figs. (predorsal buckler and teeth). British Guiana and Trinidad.

Rhamdia vilsoni (Gill).

Pimelonotus vilsoni Gill, Ann. Lyc. N. Hist. N. Y., VI, 1858, p. 391.
Pimelodus (Rhamdia) wilsoni Regan, Proc. Zool. Soc. London, 1906, p. 386.
Rhamdia vilsoni Fowler, Proc. Acad. Nat. Sci. Phila., 1915, p. 209.

Trachycorystes galeatus (Linnæus).

Parauchenipterus pascæ Regan, *l.c.*, p. 387 (non Pl.). Caroni River.
Pseudauchenipterus guppyi Regan, *l.c.*, Pl. 24 (non 23).

Pseudauchenipterus nodosus (Bloch).

Pseudauchenipterus guppyi Regan, *l.c.* (non Pl.). Caroni River.
Parauchenipterus pascæ Regan, *l.c.*, Pl. 23 (non 24).

Callichthys callichthys (Linnæus).

Callichthys callichthys Fowler, *l.c.*
C. kneri Gill, *l.c.*, p. 394.
—— Regan, *l.c.*, p. 388. Bejucal Swamp.

Hoplosternum littorale (Hancock).

C. littoralis Günther, *l.c.*, p. 227.
—— Regan, *l.c.*
Hoplosternum littorale Fowler, *l.c.*, p. 229.
H. lævigatum Gill, *l.c.*, p. 396.
H. stevardii Gill, *l.c.*, p. 401.

[12] Proc. Acad. Nat. Sci. Phila., 1897, p. 95. Jamaica.
[13] *L.c.* Jamaica.
[14] *Sitz. Ak. Wiss. Wien*, LXXX, I, 1880, p. 176. Rio Janeiro.
[15] *L.c.*, p. 174. Para.
[16] *Ann. Mag. Nat. Hist. London*, (4) XIV, 1874, p. 455. Rio Parana.

Hoplosternum thoracatum (Valenciennes).

C. thoracatus Günther, *l.c.*, p. 228.
—— Regan, *l.c.*

Corydoras æneus (Gill).

Hoplosternum æneum Gill, *l.c.*, p. 403.
Corydorus æneus Regan, *l.c.*

Plecostomus plecostomus (Linnæus).

P. guacari Regan, *l.c.*, p. 389.
Hypostomus robinii (non Valenciennes) Gill, *l.c.*

Plecostomus robinii Valenciennes.

P. robini Regan, *l.c.*

Lasiancistrus guacharote (Valenciennes).

Ancistrus guacharote Gill, *l.c.*, p. 409.
A. trinitatis Regan, *l.c.*

Ancistrus cirrhosus (Valenciennes).

Xenochara cirrhosum Regan, *l.c.*

Curimatus argenteus Gill.

L.c., p. 289.
—— Regan, *l.c.*, p. 385, Pl. 21, fig. 3. Ravines of Streatham Lodge Estate.

Odontostilbe pulcher (Gill).

Paciluriehthys pulcher Gill, *l.c.*, p. 419.
Chirodon pulcher Regan, *l.c.*, Pl. 22, fig. 2. Cumuto.

Astyanax bimaculatus (Linnæus).

P. bimaculatus Fowler, Proc. Acad. Nat. Sci. Phila., 1915, p. 261. San Juan.
P. brevoortii Gill, *l.c.*, p. 417.
Tetragonopterus maculatus Regan, *l.c.*, p. 384. Maracas River.

Four examples from Diego Martin River, near Port-of-Spain. Length $1\frac{11}{16}$ to $2\frac{11}{16}$ inches.

Astyanax tæniurus (Gill).

P. tæniurus Gill, *l.c.*, p. 418.
T. tæniurus Regan, *l.c.*, p. 383, Pl. 22, fig. 4.
T. trinitatis Regan, *l.c.*, p. 384.

Astyanax guppyi (Regan).

T. guppyi Regan, *l.c.*, Pl. 21, fig. 1. Glenside Estate Stream, at the foot of the northern range of hills.

Hemigrammus unilineatus (Gill).

Paciluriehthys (H.) unilineatus Gill, *l.c.*, p. 420.
Tetragonopterus (H.) unilineatus Regan, *l.c.*, Pl. 22, fig. 5. Cumuto.

Stevardia altipinnis Gill.

L.c., p. 425.
Corynopoma riisei Gill, *l.c.*, p. 426.
C. riisii Regan, *l.c.*, p. 382, Pl. 22, fig. 3. Tacarigna River.
C. veedoni Gill, *l.c.*, p. 427.
Nematopoma scarlesii Gill, *l.c.*, p. 429.

Hoplias malabaricus (Bloch).

Macrodon ferox Gill, *l.c.*, p. 413.
M. trahira Regan, *l.c.*

Hoploerythrinus unitæniatus (Agassiz).

Erythrinus unitæniatus Regan, *l.c.*
E. cinereus Gill, *l.c.*

Gymnotus carapo Linnæus.

Carapus fasciatus Regan, *l.c.*, p. 386. Bejucal Swamp and Cumuto.

Synbranchus marmoratus Bloch.

Symbranchus marmoratus Günther, *l.c.*, VIII, 1870, p. 15.
—— Regan, *l.c.*, p. 389.

Leptocephalus conger (Linnæus).

Several seen in the market, though not preserved.

Echidna catenata (Bloch).

Muræna catenata Günther, *l.c.*, p. 130.

Rivulus hartii (Boulenger).

Haplochilus harti Regan, Proc. Zool. Soc. London, 1906, p. 389, Pl. 21, fig. 2.
R. hartii Regan, Ann. Mag. Nat. Hist. London, (8) X, November, 1912, p. 501.
R. micropus Günther, *l.c.*, VI, 1866, p. 327.

Lebistes reticulatus (Peters).

—— Regan, Proc. Zool. Soc. London, 1913, p. 1008, fig. 173d (intromittent organ).
—— Fowler, Proc. Acad. Nat. Sci. Phila., 1915, p. 261. Blue Basin Falls
Girardinus guppii Günther, *l.c.*, p. 353.
G. guppyi Regan, *l.c.*, 1906, p. 390, Pl. 22, fig. 1. Dry River at Belmont.

Many examples, $\frac{13}{16}$ to $1\frac{1}{2}$ inches long, from Diego Martin Stream.[17]

Anableps anableps (Linnæus).

Anableps tetrophthalmus Günther, *l.c.*, p. 337.

Doryichthys lineatus Kaup.

—— Regan, *l.c.*, p. 391.

Fistularia tabacaria Linnæus.

One $24\frac{1}{2}$ inches long. Several others about the same size also seen in the market.

Exocœtus volitans Linnæus.

Abundant and valued as food. Many seen brought into the markets, though none preserved as specimens.

Hyporhamphus unifasciatus (Ranzani).

One 10 inches long. Two bushels of half beaks, though the species was undetermined, were also seen at St. Kitts.

Hemiramphus brasiliensis (Linnæus).

Hemirhamphus pleii Günther, *l.c.*, VI, 1866, p. 357.

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[17] *Poecilia vivipara* Schneider and *Mollienisia sphenops* (Valenciennes) have both been reported from the Leeward Islands, though apparently not definitely from Trinidad.

Sphyræna guachancho Valenciennes.

One $10\frac{11}{16}$ inches long. A large one seen at St. Kitts was likely *S. barracuda* (Walbaum).

Mugil brasiliensis Agassiz.

—— Regan, *l.c.*, p. 391.

Several large gray mullets about 15 inches long, seen in the markets, were likely this species.

Mugil trichodon Poey.

—— Regan, *l.c.*

Agonostomus monticola (Bancroft).

—— Regan, *l.c.*

Agonostomus percoides Günther.

—— Regan, Biol. C. Amer. Pisc., 1906–8, p. 69.

Sarda sarda (Bloch).

Several seen in markets, but with the next, not preserved.

Scomberomorus regalis (Bloch).

Not uncommon in the market.

Trichiurus lepturus Linnæus.

One 19 inches long.

Oligoplites saurus (Schneider).

Chorinemus occidentalis Günther, *l.c.*, II, 1860, p. 475.

Two small ones, $4\frac{3}{4}$ and $6\frac{3}{4}$ inches long. They agree with large ones from Fort Macon, N. C. The species reaches a large size, examples of about 30 inches in length being seen in the markets. The fins are bright yellow.

Oligoplites saliens (Bloch).

One, 11 inches long. This is quite distinct from the preceding, though some writers have suggested they may be identical. *O. saliens* has a different physiognomy, less attenuate or with the profile of the lower jaw much more convex. The snout about equals the eye, or longer, in the preceding species, whereas in the present it is a little shorter than the eye. The maxillary extends further back or a little behind the hind eye edge, the suborbital though broad covers less of the cheek, and the anal is inserted distinctly before the soft dorsal, while in *O. saurus* it is inserted opposite. Dorsal and caudal largely edged with dusky. My example agrees in all respects with an example from Rio Janeiro.

Decapterus punctatus (Agassiz).

Five examples $2\frac{11}{16}$ to $2\frac{7}{8}$ inches in length.

Trachurops crumenophthalmus (Bloch).

One $5\frac{1}{8}$ inches.

Caranx hippos (Linnæus).

Large ones, two to three feet in length, seen in the market.

Caranx latus Agassiz.

One example 4 inches long.

Vomer setapinnis (Mitchill).

One 5 inches long.

Selene vomer (Linnæus).

One 5 inches in length. Large ones were seen in the market.

Chloroscombrus chrysurus (Linnæus).

Six examples, $4\frac{1}{2}$ to $6\frac{1}{2}$ inches.

Pomatomus saltatrix (Linnæus).

Few examples, each about three or four pounds in weight, seen in the market.

Rachycentron canadum (Linnæus).

One $10\frac{3}{8}$ inches long.

Coryphæna hippurus Linnæus.

Several seen in the market, and also others at Barbadoes.

Seserinus paru (Linnæus).

One $5\frac{3}{4}$ inches long.

Centropomus ensiferus Poey.

—— Regan, Proc. Zool. Soc. London, 1906, p. 391. Caroni River.

One $4\frac{15}{16}$ inches.

Centropomus undecimalis (Bloch).

—— Regan, *l.c.* Caroni River.

Epinephelus adscensionis (Osbeck).

Serranus impetiginosus Günther, Cat. F. Brit. Mus., I, 1859, p. 142.
E. ascensionis Boulenger, Cat. F. Brit. Mus., Ed. 2, I, 1895, p. 228.

Petrometopon cruentatus coronatus (Valenciennes).

Serranus coronatus Günther, *l.c.*, p. 124.
Epinephelus guttatus Boulenger, *l.c.*, p. 176.

Mycteroperca ruber (Bloch).

Serranus undulosus Günther, *l.c.*, p. 143.

Mycteroperca bonaci (Poey).

Epinephelus bonaci Boulenger, *l.c.*, p. 265.

Mycteroperca dimidiata (Poey).

Head $2\frac{2}{5}$; depth $3\frac{1}{5}$; D. XI, 16, 1; A. III, 12, 1; scales about 100 in lateral line to caudal base, and 15 more on latter; tubes 83 in lateral line to caudal base, and about 15 more on latter; 17 scales between soft dorsal origin and lateral line; 31 scales in vertical series between spinous anal origin and lateral line; snout $3\frac{1}{2}$ in head measured from upper jaw tip; eye $5\frac{1}{3}$; maxillary $2\frac{1}{4}$; interorbital $5\frac{3}{4}$. Body well compressed, contour elongately ellipsoid. Head large. Snout about long as wide. Eye high, little ellipsoid, centre about first $\frac{2}{5}$ in head. Mouth large, lower jaw well protruded. Maxillary reaches opposite eye centre. Bands of conic teeth in jaws, inner depressible and enlarged little in front of upper and along sides of lower. Pair of firm erect outer wide-set canines above. Row of small teeth on vomer and palatines. Nostrils close, front one little larger and at last fourth in snout. Interorbital slightly convex. Preopercle angle rather salient, with slightly enlarged serræ. Rakers VII, 3 + 11, VII, lanceolate, $1\frac{1}{2}$ in eye. Scales crowded along edges of body, small, cycloid on predorsal, head and chest, otherwise mostly ciliated. Lateral line concurrent with dorsal profile. Dorsal spines pungent, fourth longest and first shortest. Rayed dorsal and anal alike, rounded. Anal spines graduated up to third, which longest. Caudal truncate, $1\frac{1}{2}$ in head. Pectoral large, $1\frac{3}{4}$ in head. Ventral reaches vent, though not quite to anal, $2\frac{1}{8}$ in head. Color in alcohol mostly deep brown, paler below and clouded with whitish. Pale yellowish tints on lower surface of head. Iris yellowish and dusky. Indistinct pale ring around caudal peduncle, behind which above on rudimentary caudal rays inconspicuous small dusky or blackish saddle. Vertical fins and ventrals all more or less dusky to blackish, also all edged very narrowly more or less with whitish. Spinous dorsal with edge, middle and base more or less with lengthwise blackish streak. Pectoral grayish. Length $5\frac{9}{16}$ inches.

This species is said to be very rare, and only previously known from Cuba.

Diplectrum radiale (Quoy and Gaimard).

One $6\frac{5}{8}$ inches.

Eudulus auriga (Valenciennes).

Serranus auriga Boulenger, Cat. F. Brit. Mus., Ed. 2, I, 1895, p. 287.

Rypticus saponaceus (Schneider).

Rhypticus saponaceus Boulenger, *l.c.*, p. 348.

Rypticus arenatus Valenciennes.

Head 3; depth $3\frac{3}{5}$; D. III, 21; A. 14; snout 6 in head, measured from upper jaw tip; eye $4\frac{1}{2}$; maxillary $2\frac{1}{8}$; interorbital $11\frac{1}{2}$; pores in lateral line about 73; rakers x + 8, x, clavate, 3 in eye; eye longer than snout; maxillary extends slightly beyond hind eye edge. Iris dark reddish. Edges of dorsal, caudal and anal very narrowly whitish, submarginal region blackish. One example $5\frac{3}{4}$ inches long.

This species is acknowledged to be distinct from *R. saponaceus* on account of its larger eye, longer than snout. As I have no corresponding small examples of *R. saponaceus,* these points cannot be verified. Boulenger says the snout and eye are equal in *R. arenatus,* though in my example the eye is distinctly larger. Jordan and Rutter have mentioned several examples from Jamaica,[18] and state "one has three opercular spines" and "aside from the number of opercular spines, this species may be distinguished from the preceding by its more slender body, depth $1\frac{1}{5}$ to $1\frac{1}{3}$ in head, and by the less projecting lower jaw." Now the type of *Eleutheractis coriaceus* Cope shows the depth greater than the length of the head, and the preopercular spines 2 on the left side (lower bifid) of the head and 3 on the right side. The opercular spines are three on both sides, and both upper and median of left side bifid.

Lutianus analis (Valenciennes).

Four small examples, $4\frac{1}{16}$ to $5\frac{9}{16}$ inches.

Lutianus synagris (Linnæus).

One young, $4\frac{1}{8}$ inches.

Ocyurus chrysurus (Bloch).

Mesoprion chrysurus Günther, Cat. F. Brit. Mus., I, 1859, p. 186.

One $4\frac{3}{4}$ inches.

Hæmulon parra (Desmarest).

Five examples, $4\frac{1}{4}$ to $5\frac{3}{4}$ inches long. All with diffuse large blackish blotch at caudal base.

Hæmulon flavolineatum (Valenciennes).

H. xanthopterum Günther, *l.c.,* p. 312.

Brachygenys chrysargyreus (Günther).

H. chrysargyreum Günther, *l.c.,* p. 314.

Bathystoma rimator (Jordan and Swain).

H. chrysopterum (non Linnæus) Günther, *l.c.,* p. 313.

[18] *Rypticus coriaceus* Jordan and Rutter, Proc. Acad. Nat. Sci. Phila., 1897, p. 107.

Bathystoma striatum (Linnæus).

One example, 6 inches long. General color leaden above, white below. Body with five bright gilt lengthwise bands. Iris gray-yellow. Inside mouth red. Fins largely gray.

Orthopristis scapularis sp. nov. Fig. 4.

Head $2\frac{7}{8}$; depth $2\frac{2}{3}$; D. XII, 15, 1; A. III, 10, 1; P. 1, 16; V. I, 5; scales 52 in lateral line to caudal base, and 8 more on latter; 10 scales between spinous dorsal origin and l.l., and same between soft dorsal origin and l.l.; 16 scales in vertical series between spinous anal origin and l.l.; 36 scales before spinous dorsal; snout $2\frac{2}{3}$ in head; eye $3\frac{2}{3}$; maxillary 3; interorbital $3\frac{3}{5}$; third dorsal spine $2\frac{1}{8}$; first branched dorsal ray $3\frac{1}{6}$; second anal spine $3\frac{1}{4}$; first branched anal ray $2\frac{1}{2}$; least depth of caudal peduncle 3; upper caudal lobe $1\frac{1}{5}$; pectoral $1\frac{2}{5}$; ventral $1\frac{1}{2}$.

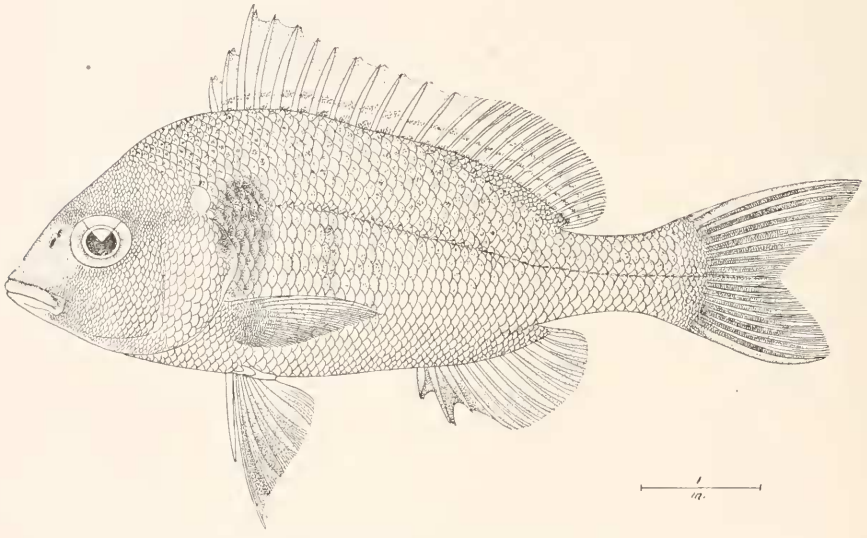

Fig. 4.—*Orthopristis scapularis* Fowler. (Type.)

Body well compressed, back well elevated in front so that front profile steeply inclined, greatest depth at spinous dorsal origin, predorsal slightly keeled medianly and other edges rounded convexly. Caudal peduncle well compressed, least depth $1\frac{1}{3}$ its length.

Head rather large, well compressed, flattened sides nearly even, and upper profile slightly concave before nostrils and above eye. Snout convex over surface, long as wide. Eye large, ellipsoid, elevated, centre slightly before middle in head length. Mouth small,

low, little inclined, jaws about even. Maxillary extends back about opposite hind nostril. Lips rather firm, well developed, fleshy. Chin with two small pores below, and behind large deep median one. Teeth conic, firm, simple, in broad bands in jaws, none on tongue or roof of mouth. Upper and lower buccal folds broad, papillose. Tongue broad, depressed, rounded and free in front. Mandible depressed, rami strong, elevated little behind inside mouth. Nostrils together, close before front eye edge, anterior lower and twice size of posterior. Interorbital convex. Hind preopercle edge vertical, with more or less concealed though well-developed row of serræ, and slightly salient rounded angle unarmed. Suprascapular scale with membranous edge.

Gill-opening extends forward about opposite middle of pupil. Rakers 9 + 12, lanceolate, compressed, about 4 in eye. Filaments $1\frac{4}{5}$ in eye. Pseudobranchiæ $2\frac{1}{4}$ in eye. Isthmus narrow and with branchiostegal membrane forming strong free fold across front portion.

Scales moderate, most finely ciliated, above lateral line in oblique rows sloping up to dorsal fin, and below in horizontal rows. Scales reduced on front of breast, along bases of dorsals and anal, on caudal base, head above and cheek, so that last has ten rows from eye below to lower corner of preopercular ridge. Except basal scaly sheaths, of dorsals and anals, fins entirely naked. Caudal largely covered with very minute scales. Base of pectoral with minute scales. Muzzle largely naked. Pectoral with rounded axillary scaly sheath, and ventral with pointed axillary scale about $\frac{1}{3}$ length of fin. Lateral line complete, concurrent with dorsal profile, tubes simple, each slightly upturned, and extends out basally on caudal to middle of fin.

Spinous dorsal with nearly entire edge, third spine longest and first shortest. Soft dorsal lower, uniform. Spinous anal small, first spine shortest and second longest, and rayed fin like soft dorsal. Caudal broad, broadly forked, lobes pointed and upper longer. Pectoral moderate, low, upper rays longer. Ventral inserted behind pectoral base, spine $\frac{3}{5}$ length of fin, and extends $\frac{3}{4}$ to anal. Vent well before anal.

Color in alcohol deep sooty-brown generally, tinged with dull olivaceous, and back and sides above lateral line, with an obscure mottled appearance. Large dusky-brown humeral blotch about equal to twice extent of eye in area, and also embraces upper hind opercular edge. Behind this, just below lateral line, several obscure

dull brownish vertical streaks. Under surface of body more or less marbled with whitish, darker color producing soiled appearance. Iris silvery, with grayish tints. Mandible whitish. Mouth pale in front, though within pharynx and gill-opening brilliant orange. Dorsals grayish, basally with dusky lengthwise band, above this whitish band bordered above by another dusky band. All area above on spinous fin dark, though on rayed fin behind another short paler lengthwise band. Anals grayish, also pectorals and caudal, latter very obscurely with several faint vertical darker cross bands. Ventrals dusky-gray, front edge whitish, and ends with few whitish mottlings.

Length $6\frac{3}{4}$ inches.

Type, No. 45,084, A. N. S. P. Port-of-Spain, Trinidad, British West Indies. February–March, 1915. Richard M. Abbott.

Only the type secured. This interesting species is related to *Orthopristis chrysopterus* (Linnæus) from the northern waters of the Gulf of Mexico and the United States. It differs at once in its fewer anal rays, fewer scales and coloration.

(*Scapularis,* shoulder, with reference to the dark blotch.)

Conodon nobilis (Linnæus).

C. nobilis Fowler, Proc. Acad. Nat. Sci. Phila., 1915, p. 261.

Brachydeuterus corvinæformis (Steindachner).

One $5\frac{7}{8}$ inches long.

Calamus calamus (Valenciennes).

Chrysophrys calamus Günther, Cat. F. Brit. Mus., I, 1859, p. 487.

Abundant in the markets, though none preserved.

Archosargus unimaculatus (Bloch).

Two $5\frac{1}{2}$ and $6\frac{1}{2}$ inches.

Eucinostomus gula (Valenciennes).

Eight examples, 3 to $3\frac{11}{16}$ inches.

Gerres rhombeus Valenciennes.

Six examples $2\frac{1}{4}$ to $6\frac{5}{8}$ inches long. Young with very large caudal and four or five narrow pale dusky vertical lines on front of body or before anal.

Larimus breviceps Valenciennes.

One $6\frac{3}{8}$ inches.

Odontoscion dentex (Valenciennes).

L. dentex Günther, *l.c.*, II, 1860, p. 269.

Corvula subæqualis (Poey).

Head $2\frac{4}{5}$; depth $3\frac{1}{8}$; D. XI–I, 23; A. II, 9; scales 48 in lateral line to caudal base, and about 15 more out over caudal fin basally; 7 scales above l.l. to spinous dorsal origin; 8 scales below l.l. to spinous anal origin; snout $4\frac{1}{4}$ in head; eye $3\frac{3}{4}$; maxillary $2\frac{1}{4}$; interorbital $4\frac{2}{5}$. Body rather robust, compressed. Head compressed, upper profile straight. Snout length $\frac{3}{4}$ its width. Eye large, rounded, high, little behind first third in head. Mouth low, large, jaws about even. Maxillary reaches back about opposite hind pupil edge. Teeth conic, each jaw with row of large even ones, and upper with inner close-set narrow band of fine ones. Tongue smooth, free. Nostrils close before eye, together, hind one vertical slit. Interorbital, nearly level. Preopercle edge membranous, notched. Rakers 9 + 14, III, lanceolate, 2 in eye. Scales in horizontal rows below lateral line, above concurrent with its course, except below middle of spinous dorsal when sloping obliquely up under origin of soft dorsal, though concurrent with lateral line rest of space posteriorly. Rayed vertical fins largely scaly over basal portions. Lateral line concurrent with back, tubes large, bifid. Dorsal spines slender, fifth longest. Soft dorsal inserted about midway between eye centre and caudal base, fin lower than spinous fin. Second anal spine much longer than first, about $\frac{3}{5}$ first branched ray. Caudal double truncate. Pectoral $1\frac{2}{5}$ in head, ventral very slightly shorter. Color in alcohol olivaceous, with more or less dusted appearance. Each row of scales with dark dusky-olive median streak, forming continuous lengthwise lines. Under surface of body with whitish ground-color. Iris brownish. Fins all grayish, spinous dorsal largely dusky. Inside gill-opening and pectoral base and axilla pale. Length $4\frac{3}{4}$ inches.

This species appears to be rare or little known. Two examples recorded by Jordan and Eigenmann from St. Thomas indicate the variation.[19] The above characters given very strongly suggest that *Corvula sactæ-luciæ* Jordan is identical.

Bairdiella ronchus (Valenciennes).

One $3\frac{3}{8}$ inches.

Stellifer stellifer (Bloch).

One $5\frac{3}{8}$ inches.

Polydactylus virginicus (Linnæus).

One $6\frac{1}{4}$ inches.

[19] Rep. U. S. F. Com., 1886 (1889), p. 380.

Polycentrus schomburgkii Müller and Troschel.

—— Regan, Proc. Z. Soc. London, 1906, p. 391, Pl. 25, fig. 2.
P. tricolor Gill, Ann. Lyc. N. Hist. N. Y., VI, 1858, p. 371.

Æquidens pulcher (Gill).

Cychlasoma pulchrum Gill, *l.c.*, p. 22.
Acara pulchra Regan, *l.c.*, p. 392, Pl. 25, fig. 1.
Æquidens pulcher Fowler, Proc. Acad. Nat. Sci. Phila., 1915, p. 261. St. Joseph and Blue Basin.

Cichlasoma bimaculatum (Linnæus).

—— Regan, *l.c.*
Cychlasoma tænia Gill, *l.c.*

Crenicichla saxatilis (Linnæus).

—— Regan, *l.c.*, 1905, p. 159; *l.c.*, 1906, p. 391.
C. frenata Gill, *l.c.*

Iridio kirschii Jordan and Evermann.

One 6 inches.

Iridio maculipinna (Müller and Troschel).

Platyglossus maculipinna Günther, Cat. F. Brit. Mus., IV, 1862, p. 165.

Cryptotomus ustus (Valenciennes).

Callyodon ustus Günther, *l.c.*, p. 214.

One example, $6\frac{3}{8}$ inches long. Color when fresh generally bluish-green, with irregular pale purplish-brown blotches, also several ill-defined underlaid lengthwise tints of same shade. In some lights body shows brilliant purple and violet reflections. Under surface of head and trunk whitish. Narrow blue line from eye to mouth, and short bar behind above. Iris whitish, narrow green circle bordering pupil. Dorsals and anals pale gray, mottled finely with darker tints. Caudal dull red, spotted with purple, spots smaller than eye and most evident on middle near base. Pectoral and ventral pale, base of former gray. Colors fading brownish in alcohol.

Cryptotomus beryllinus Jordan and Swain.

One 6 inches.

Sparisoma radians (Valenciennes).

One $5\frac{13}{16}$ inches.

Sparisoma hoplomystax (Cope).

One $5\frac{1}{2}$ inches long. Color when fresh brownish, with olive tinge above, obscurely and finely mottled. Side of belly with purplish tinge, and lower surface whitish. Four indistinct darker blotches on back reflected on dorsal fins, first at spinous dorsal origin, second little behind middle of spinous dorsal, third at front of soft dorsal, and fourth on caudal peduncle above. Iris pale brown, and narrow

brown ring its entire extent medianly. Dorsals more or less with greenish and brown tints, variegated with gray and dusky. Anals grayish, variegated with greenish blotches. Caudal purplish-green, hind edge narrowly pale, submarginally dusky. Pectoral and ventral gray. Pectoral axil and base, and edge of gill-opening broadly for good extent opposite, brilliant blue-green.

Sparisoma aurofrenatum (Valenciennes).

Scarus aurofrenatus Günther, Cat. F. Brit. Mus., IV, 1862, p. 212.

Sparisoma distinctum (Poey).

Scarus frondosus (non Cuvier) Günther, *l.c.*, p. 210.

Callyodon cæruleus (Bloch).

One $5\frac{3}{8}$ inches.

Chætodipterus faber (Broussonet).

One $3\frac{1}{2}$ inches.

Chætodon ocellatus Bloch.

One $3\frac{1}{8}$ inches. Also four from Isle of Monos (Dr. B. Sharp).

Chætodon capistratus Linnæus.

—— Günther, *l.c.*, II, 1860, p. 12.

Pomacanthus arcuatus (Linnæus).

One from Trinidad (Dr. B. Sharp).

Holacanthus tricolor (Bloch).

—— Günther, *l.c.*

Hepatus cœruleus (Schneider).

Not secured, though brought into the market. Very common at Antigua.

Stephanolepis hispidus (Linnæus).

Monacanthus setifer Günther, *l.c.*, VIII, 1870, p. 239.

Two small ones $2\frac{3}{4}$ and 3 inches long.

Lactophrys tricornis (Linnæus).

One $2\frac{3}{4}$ inches.

Lactophrys triqueter (Linnæus).

Ostracion triqueter Günther, Cat. F. Brit. Mus., VIII, 1870, p. 256.

Spheroides testudineus (Linnæus).

One $3\frac{1}{2}$ inches long. The dark blotches or spots on the sides are a little larger and more numerous than those on examples about the same size from Nicaragua.

Chilomycterus spinosus (Linnæus).

C. geometricus Günther, *l.c.*, p. 310.

Chilomycterus antillarum Jordan and Rutter.

One example $2\frac{13}{16}$ inches long. Many examples of *Diodon hystrix* Linnæus, seen in the curio-shops of Barbadoes, some doubtless obtained in this vicinity.

Scorpæna brasiliensis Valenciennes.

One $6\frac{1}{8}$ inches long. It shows a supra-occipital tentacle well developed and a narrow infra-orbital.

Scorpæna bergii Evermann and Marsh.

One example 4 inches long. It differs from the original account and figure in the presence of a much longer supra-orbital tentacle.

Cephalacanthus volitans (Linnæus).

Dactylopterus volitans Günther, *l.c.*, II, 1860, p. 221.

One $4\frac{1}{2}$ inches.

Cyclopsetta chittendeni B. A. Bean.

Proc. U. S. Nat. Mus., 1894, p. 635.

Citharichthys spilopterus Günther.

Two $3\frac{3}{4}$ and $3\frac{7}{8}$ inches long.

Etropus microstomus (Gill).

One example, $4\frac{1}{8}$ inches long. A comparison with examples from Ocean City, N. J., and Wallops Island, Va., shows no specific difference, though a wide range of variation. This latter shows *E. rimosus* Goode and Bean as a synonym, and possibly *E. crossotus* Jordan and Gilbert also.

Achirus lineatus (Linnæus).

One 7 inches.

Philypnus dormitor (Lacépède).

—— Regan, Proc. Zool. Soc. London, 1906, p. 392. Caroni River.

Dormitator maculatus (Bloch).

Eleotris maculatus Günther, Cat. F. Brit. Mus., III, 1861, p. 112.
D. maculatus Regan, *l.c.* Bejucal Swamp.

Evorthodus breviceps Gill.

Proc. Acad. Nat. Sci. Phila., 1859, p. 195. Trinidad, near the mouth of a river in the vicinity of the celebrated Pitch Lake.
—— Regan, *l.c.*, p. 393.

Gobius fasciatus (Gill).

Ctenogobius fasciatus Gill, Ann. Lyc. N. Hist. N. Y., 1858, p. 378.
G. fasciatus Regan, *l.c.*, p. 392.

Awaous taiasica (Lichtenstein).

Chonophorus banana Regan, *l.c.*, p. 393.

Batrachoides surinamensis (Schneider).

Two seen, but not preserved.

Antennarius scaber (Cuvier).

One example $2\frac{7}{8}$ inches long.

Grenada.

On March 9 a small collection was obtained at St. George. Only one of the few previously listed species was secured, all the others obtained by Mr. Abbott being new to the fauna.

Dasyatis gymnura (Müller).

Trygon tuberculata Günther, Cat. F. Brit. Mus., VIII, 1870, p. 480.

Opisthonema oglinum (Le Sueur).

Clupea thrissa Günther, *l.c.*, VII, 1868, p. 432.

Corydoras æneus (Gill).

—— Regan, Proc. Z. Soc. London, 1906, p. 388.

Anguilla rostrata (Le Sueur).

A. texana Günther, *l.c.*, VIII, 1870, p. 32.

Enchelycore nigricans (Bonnaterre).

—— Günther, *l.c.*, p. 135.

Gymnothorax funebris Ranzani.

Muræna afra (non Bloch) Günther, *l.c.*, p. 123.

Rivulus hartii (Boulenger).

—— Regan, Ann. Mag. Nat. Hist. London, (8) X, 1912, p. 501.

Holocentrus adscensionis (Osbeck).

One $7\frac{7}{8}$ inches.

Trachurops crumenophthalmus (Bloch).

Two, $4\frac{1}{2}$ and $6\frac{1}{4}$ inches.

Decapterus punctatus (Agassiz).

One 5 inches.

Petrometopon cruentatus (Lacépède.).

One $6\frac{3}{8}$ inches.

Cephalopholis fulvus (Linnæus).

Two, $5\frac{5}{8}$ and $6\frac{1}{2}$ inches.

Epinephelus niveatus (Valenciennes).

—— Boulenger, Cat. F. Brit. Mus., Ed. 2, I, 1895, p. 225, Pl. 3, fig. B.

Epinephelus adscensionis (Osbeck).

One $6\frac{1}{4}$ inches.

Alphestes chloropterus (Cuvier).

E. afer, Boulenger, *l.c.*, p. 254.

One $8\frac{1}{8}$ inches long.

Mycteroperca bonaci (Poey).

Epinephelus bonaci Boulenger, *l.c.*, p. 265.

Mycteroperca falcata (Poey).

E. facatus Boulenger, *l.c.*, p. 261.

Hypoplectrus unicolor guttavarius (Poey).

Back, caudal peduncle and sides above rich dark blue-black when fresh, same color also extending on bases of both dorsals. Rest of body, including predorsal region and all fins, brilliant orange. Iris same, though orange fading white in alcohol. Both dorsals, anals and ventrals all very narrowly and inconspicuously edged with black. Broad blue-black bar from each side of snout tip to eye, edged on each side by narrower bar of cobalt-blue, which also with still outer narrower dusky marginal streak. Lower sides of body with dusky diffused in brilliant orange. Length $5\frac{1}{4}$ inches.

Ocyurus chrysurus (Bloch).

One $5\frac{7}{8}$ inches long.

Iridio garnoti (Valenciennes).

Color when fresh, back neutral tint, greenish-yellow in front above, centre of each scale more olive-green. After depressed pectoral vertical ill-defined broad purplish-black streak towards anal, fading out below. Behind vertical bar all upper surface of body and sides purplish-neutral shade, middle of each scale darker. Head, belly and lower sides tinged dull purple-gray, darker tint across mandible below, leaving broad whitish or pale lower lip. Iris blue-green, narrow circle of gold around pupil. From upper hind eye edge two narrow blackish lines towards spinous dorsal origin, above and behind several small scattered blackish dots, inconspicuous. Snout, interorbital and opercular region, little darker than rest of head. Both dorsals with very narrow whitish edge, general color slaty to purplish-gray, though on median and basal portions its entire extent with fine deep scarlet vermiculations, less numerous on spinous fin, and very conspicuous, becoming mostly regular, parallel and sloping obliquely back on soft dorsal behind. Spinous dorsal with submarginal pale or scarlet line fading out on soft fin, though dark area it defines continued similarly wide to end of fin. Anal largely of neutral tint, with median lengthwise area of deep scarlet (turning yellow in alcohol) which vermiculate, and many of vermiculations extend to base of fin. Submarginal dusky line close to pale edge of anal. Caudal warm blackish-brown, edge narrowly grayish, and concurrent with convex hind edge. Five transverse dark purple lines, edged narrowly with violet-gray, on caudal. Pectoral pale gray, becomes blackish towards tip and along edge above, axil bright green, small neutral tinted spot at origin of fin,

and grayish area before base. Ventral grayish, tip dusky. Length $5\frac{1}{2}$ inches.

Another example differs in having only a few dusky dots behind dark lines from eye above, all of which interrupted, and no dark dots above. Greenish-yellow of front of back extends on lower side of head below eye. Spinous dorsal without dark vermiculations. Transverse lines on caudal forking and irregular. Length $5\frac{11}{16}$ inches.

Iridio bivittatus (Bloch).

One 6 inches.

St. Lucia.

A small collection was made at Castries on February 24. But few species have been listed from this island.

Lebistes reticulatus (Peters).

—— Regan, Proc. Zool. Soc. London, 1913, p. 1008, fig. 173d (intromittent organ).

Myriapristis jacobus Cuvier.

One $4\frac{3}{4}$ inches.

Mycteroperca venenosa (Linnæus).

—— Jordan and Eigenmann, Bull. U. S. F. Com., VIII, 1890, p. 369.

Hypoplectrus unicolor chlorurus (Valenciennes).

One $4\frac{3}{4}$ inches.

Priacanthus cruentatus (Lacépède).

One $5\frac{7}{8}$ inches.

Bathystoma rimator (Jordan and Swain).

One 6 inches.

Corvula subæqualis (Poey).

C. sanctæ-luciæ Jordan, Proc. U. S. Nat. Mus., 1889, p. 649.

Clepticus parræ (Schneider).

Color when fresh brilliant purple, with bright ultramarine-blue spots scattered over the back and sides irregularly (fading blackish in alcohol). Iris dusky, narrow golden circle around pupil. Under surface of head pale brownish. Scaly dorsal bases brilliant dark purple, membranes of fin black, though last three rays and membrane in contrast white. Scaly anal base pale, membrane same, last rays white and median rays jet-black terminally. Caudal purple-black, pointed lobes jet-black, and hind edge white. Pectoral dusky-gray, paler below. Ventral grayish basally, whitish terminally. One example, $7\frac{5}{8}$ inches long. Rare.

Iridio kirschi Jordan and Evermann.

Color when fresh largely olive-green, centre of each scale little darker. Just after head above pectoral several scales with pale bases, red in centres and edges dusky. Head variegated. Pale-green band from eye forward to mouth, continued back behind eye, then down along preopercle edge giving off four branches horizontally on opercles, extends horizontally forward to mouth corner crossing lower jaw, and leaves large white symphyseal area. Also pale-green branch from eye above, toward, but not quite reaching snout tip, where wide, then joining its fellow extends upon front of head to predorsal region. Most of pale green bands on head bordered with pale-green lines. Close behind eye deep blue-black blotch little larger than pupil. Several greenish spots on each side of predorsal irregularly. Caudal base with obscure dusky vertical wedge-shaped mark. Iris green, narrow golden circle around pupil. Dorsals brilliant scarlet basally at least, paler towards edges (fins faded largely grayish in alcohol). Soft dorsal more or less vermiculate, with darker basally, last two rays within narrow dusky basal blotch, and edges narrowly whitish with narrow submarginal gray line. Anal largely olive-gray, darker or slightly slaty basally, broad median area as lengthwise crimson band, upper edge evenly undulated, lower straight, both formed as inner darker brown line and outer paler bordering line. Anal edge narrowly whitish, with close line submarginally of brownish. Caudal brilliant greenish-yellow with broad paler band obliquely back above and another below, also narrower median one. Upper and lower corners pale dusky, with several irregular paler blotches. Pectoral and ventral pale, former with ventral axil and outer end pale purplish, front base with oblique dark neutral tint. Length $6\frac{3}{8}$ inches. It agrees with the Trinidad example.

Callyodon cæruleus (Bloch).

One.

Sparisoma flavescens (Schneider).

One $5\frac{5}{8}$ inches.

Sparisoma rubripinne (Valenciennes).

One $6\frac{7}{8}$ inches.

Hepatus bahianus (Castelnau).

One $4\frac{3}{4}$ inches.

Angelichthys isabelita Jordan and Rutter.

One example $4\frac{1}{4}$ inches long. Not seen previously outside of Florida.